

PRELIMINARY SCOPE OF WORK
Focused Remedial Investigation/Feasibility Study
Eagle Zinc
Hillsboro, Illinois

EPA Region 5 Records Ctr.



362894

I. SCOPING (Preparation of RI Work Plan)

A RI Work Plan, including the component work plans described below, will be submitted to the USEPA for review and comment. It is anticipated that the USEPA will provide comments on the work plan, it will be modified as appropriate, and submitted to the USEPA for final approval.

A. Field Sampling Plan Preparation

The Field Sampling Plan (FSP) will be prepared in accordance with RI/FS guidance¹ and will include the following information:

- Site background
- Evaluation of Pre-Existing Site Information and Reports
- Sampling objectives
- Sample location and frequency
- Sample designation
- Sampling equipment and procedures
- Sample handling and analysis

B. Quality Assurance Project Plan Preparation

The Quality Assurance Project Plan (QAPP) will be prepared in accordance with EPA guidance² and will include the following information:

- Project management
- Measurement/data acquisition
- Assessment/oversight
- Data validation and usability

C. Site-specific Health and Safety Plan preparation

The Health and Safety Plan (HSP) will be prepared in accordance with 29 CFR 1910.120 and EPA guidance³ and will include the following information:

¹ USEPA Office of Emergency and Remedial Response, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA – Interim Final," EPA/540/G-89/004, October 1988.

² USEPA Office of Research and Development, "EPA Guidance for Quality Assurance Project Plans – EPA QA/G-5," EPA/600/R-98/013, February 1998 and USEPA Office of Emergency Remedial Response, "Quality Assurance/Quality Control Guidance for Removal Activities – Sampling QA/QC and Data Validation Procedures," EPA/540/G-90/004, April 1990.

³ USEPA Office of Research and Development, "Guidance on Remedial Investigations Under CERCLA," EPA/540/G-85/002, June 1985.

- Preparation and approval
- Site description
- Hazard evaluation
- Monitoring requirements
- Levels of protection
- Work limitation
- Authorized personnel
- Decontamination
- Emergency information

quantitative

D. Ecological Evaluation Plan

The ecological evaluation will be qualitative in nature and based on previously gathered site information and a field inspection by an environmental ecologist experienced in conducting ecological assessments in accordance with USEPA guidance. The Ecological Evaluation Plan will describe the components of the field survey and other tasks associated with the evaluation.

separate?

E. Baseline Human Health Risk Assessment Plan

The baseline human health risk assessment (BRA) will assess the human health significance of constituent concentrations at the site and will determine whether further action is needed to protect human health, considering both current and reasonably expected future land and ground water use at and near the site. The BRA Work Plan will describe the proposed risk assessment process in detail.

F. Community Relations Plan

A Community Relations Plan will be developed to document the community relations history and issues of community concern. Based on discussions with the Agency, USEPA may take the lead role in preparing and implementing the Community Relations Plan. The PRP group will cooperate and participate in community relations activities and communications as necessary.

II. SITE CHARACTERIZATION

A. General Tasks

1. Obtain off-site access

The PRPs and their attorneys and consultants will be responsible for obtaining access permission for all off-site inspection and sampling locations. Eagle Zinc facility personnel may act as a local contact in this regard. However, if initial attempts at obtaining off-site access are unsuccessful, the PRPs will seek USEPA assistance.

2. Sample Layout and Visual Inspection of Non-Use Areas

An initial inspection of the site will be conducted to:

- Mark out soil, sediment and ground water sampling locations, as well as underground utilities in these areas;
- Identify any accessibility issues for heavy equipment used in sampling; and
- Visually inspect the extreme northern and western portions of the site property (historically unused areas) for locations of any residue and undisturbed soil areas.

B. On-Site Soil Investigation

It is estimated that as many as 100 shallow soil borings will be completed on-site to characterize and delineate the extent of metals concentrations in native soils that underlie historical residual materials. However, soil screening data will be subjected to geostatistical analysis as the field sampling program progresses. Based on this analysis, fewer samples may be required to meet sampling objectives.

Soil borings will be completed in the areas previously identified as Areas 1 through 4 (Figure 1). Based on a visual inspection of the historically unused areas noted above, additional soil borings may be completed in these areas.⁴ The soil borings will be completed using a direct-push sampling apparatus (e.g., Geoprobe) and/or a hollow-stem auger drilling rig to a depth of 4 feet below the ground surface or at least two feet into visually undisturbed soil. Soil samples from each boring will be screened onsite for metals determined to be potential contaminants of concern (PCOCs) using a portable x-ray fluorescence (XRF) analyzer. The XRF results will be used to identify samples that will be retained for analysis at an off-site commercial laboratory, as well as the locations and depths of additional soil borings. For the purpose of preparing this scope of work, it is assumed that approximately 20 percent of the soil samples will be retained for laboratory analysis and that all soil samples will be analyzed for the full suite of metals previously detected in soils, residues and sediments above relevant screening criteria. These

⁴ In addition, based on a visual inspection, soils in other areas outside of previously identified Areas 1 through 4 may be sampled.

metals include antimony, arsenic, beryllium, cadmium, lead, nickel, silver, thallium and zinc.

C. Residue Pile Sampling

Each significant discrete residue pile will be evaluated by collecting representative samples in accordance with SW846 procedures and testing the samples for Toxicity Characteristic Leaching Procedure (TCLP) metals.

D. Sediment Investigation

A sediment investigation will be conducted in on-site and off-site portions of the storm water drainage systems that originate on-site or enter the site from adjacent properties. The objective of the sediment investigation will be to characterize the nature and extent of metals impacts on sediments in the drainageways. Samples will be collected as transect composites at sediment accumulation points or at representative locations in the drainage ditches/streams on-site and off-site and screened for metals determined to be PCOCs using the XRF analyzer. Based on the screening results, a subset of the samples will be retained for off-site laboratory analysis for the suite of metals identified above for soils, including antimony, arsenic, beryllium, cadmium, lead, nickel, silver, thallium and zinc. For the purposes of this scope of work, it is assumed that a total of 19 sediment samples will be retained for laboratory analysis. In addition, the discharge rate of the drainageway (if flowing at the time of the sampling program) will be approximated at each sampling location using a portable flow meter and estimates of the cross-sectional area of the ditch/stream. Figure 2 shows hypothetical sampling sediment sampling locations.

E. Ground Water Investigation

1. Installation of Temporary Monitoring Wells

A series of temporary monitoring wells/piezometers will be installed in the southwestern portion of the property and in the off-site area adjacent to the southwest property boundary using a hollow-stem auger drilling rig. The temporary wells will be used to: (1) provide information concerning the hydraulic relationship between the shallow ground water and the southwest pond; (2) better characterize the pattern of shallow ground water flow on-site and off-site; and (3) provide ground water screening data for metals at selected locations; and (4) assist in the identifying locations for additional permanent monitoring wells. For the purpose of this scope of work, it is assumed that a total of 10 temporary wells will be installed in these areas. The temporary wells will intersect the shallow ground water table and will be constructed using 2-inch diameter PVC screen and riser sections. The annular space around the well screens will be filled with a sand filter pack and the wells will be developed to the extent possible and allowed to stabilize prior to sampling or water level measurement.

Following installation, the temporary wells will be surveyed for elevation and ground water level measurements will be made from the

secondary
objective
- separating
recyclable
mat'l

what do they
have in mind

full scan /
PCOC 2nd

now do you
screen for
2nd step 1st

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SW
corner

deeper?

temporary wells and all existing site monitoring wells. Using the surveyed well elevations, a ground water contour map will be constructed and the general ground water flow pattern determined.

In addition, ground water screening samples will be collected from selected temporary wells for accelerated turnaround laboratory analysis of metals concentrations. The screening results and ground water elevations will be used to identify locations of any additional permanent monitoring wells.

2. Installation of Additional Permanent Monitoring Wells

It is anticipated that up to four of the temporary wells will be converted to permanent monitoring wells. The locations of the permanent wells will be determined based on the analytical results of the ground water screening samples and the ground water flow pattern inferred using ground water level measurements. Hypothetical locations for the new permanent monitoring wells are shown on Figure 3. The temporary wells will be converted to permanent wells by installing an annular grout seal and completing the wells with a locking stick-up type protector. The temporary wells that are not converted to permanent wells will be properly abandoned by removing the PVC pipe and sealing the borehole with grout or bentonite.

3. Ground Water Sample Collection and Analysis

Following the completion and development of the permanent monitoring wells, all monitoring wells will be sampled for the identified potential contaminants of concern for ground water: cadmium, lead, manganese, iron and sulfate. The metals analyses will be conducted using filtered and unfiltered samples to determine total and dissolved metals concentrations, respectively. In addition, a complete synoptic round of water level measurements will be made to allow for the construction of a site-wide ground water elevation contour map.

F. Ecological Evaluation

The ecological evaluation will include: (1) identification and evaluation of environmentally sensitive areas (ESAs), such as wetlands, sensitive habitats, and water bodies; (2) identification of potential contaminant migration pathways to any ESAs; (3) observations of potential impacts to identified ESAs⁵; and (4) recommendations for further ecological investigations, if warranted.

G. Site Area Receptor/Contributor Evaluation

This task will include such activities as: (1) obtaining tax maps and other information for local authorities; (2) updating the existing well search and local water purveyor survey; and (3) conducting an off-site reconnaissance survey to identify potential off-site contaminant sources, particularly with respect to sediment issues in the drainage ditches.

⁵ This may include comparisons of flora or fauna populations and quality upgradient and downgradient of drainage points for storm water originating at the Eagle Zinc site.

III. BASELINE HUMAN HEALTH RISK ASSESSMENT

The BRA will include: (1) development of a Conceptual Site Model (CSM); (2) estimation of risk, based on the CSM and USEPA guidance and policy; (3) development of Preliminary Remediation Goals (PRGs) for each medium and route of exposure; and (4) statistical comparison of the PRGs to relevant site data.

IV. RI REPORT

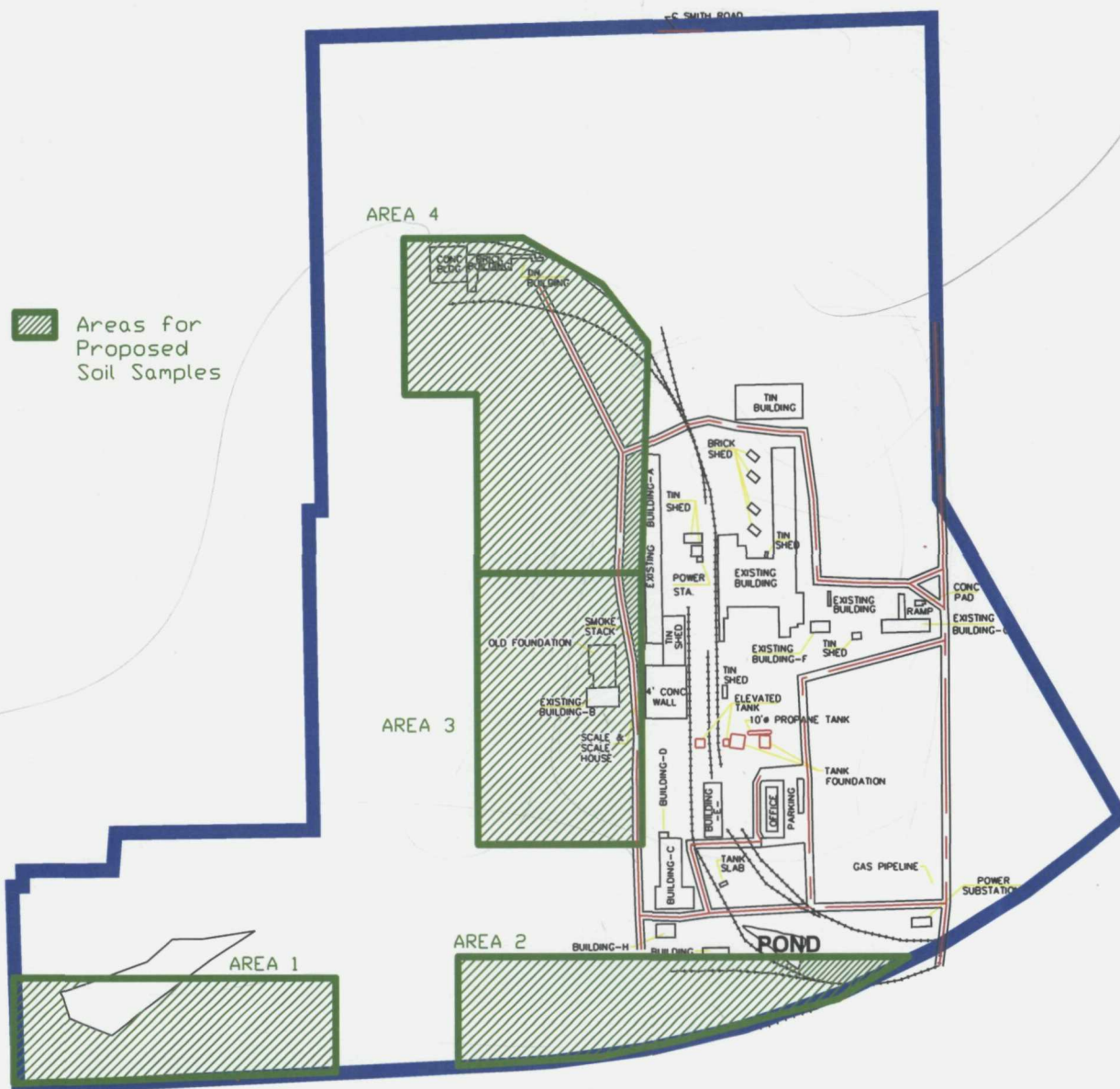
The results of the site characterization activities, the baseline human health risk assessment, and a proposal for a Presumptive Remedy Feasibility Study (FS) will be submitted to the Agency in a RI Report. It is anticipated that the Agency will provide comments on the report and proposed FS, the document will be modified as appropriate, and the report will be submitted to the Agency for final approval.

V. PRESUMPTIVE REMEDY FS

The USEPA has established preferred treatment technologies, or Presumptive Remedies, for metals in soil. For "Principal Threat" wastes, the presumptive remedy involves recovery/reclamation, immobilization, or a combination of these technologies. For "Low-Level" wastes, the presumptive remedy is containment, such as run-off controls or a clean soil cap. The FS may consider only "no action" and presumptive remedy technologies.

For sediments, residual piles and ground water requiring remediation, remedial alternatives will be established, also using presumptive remedies where applicable.

*using guidance to prepare
- insert language re: PR*



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740 Waukegan Road, Suite 401, Deerfield, IL 60015

Proposed Areas for Soil Sampling
Eagle Zinc
Hillsboro, Illinois

Figure

1

Drafter:

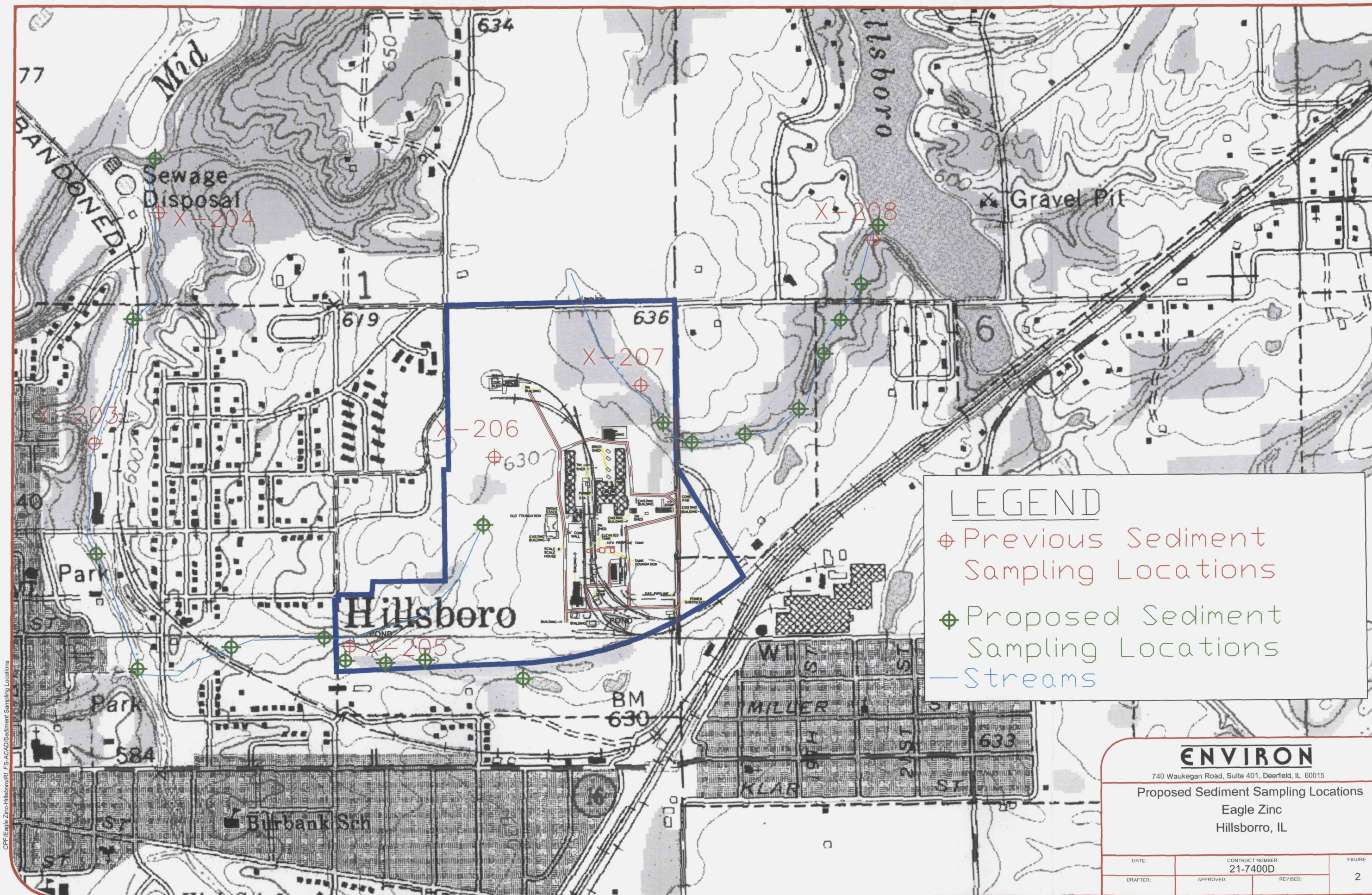
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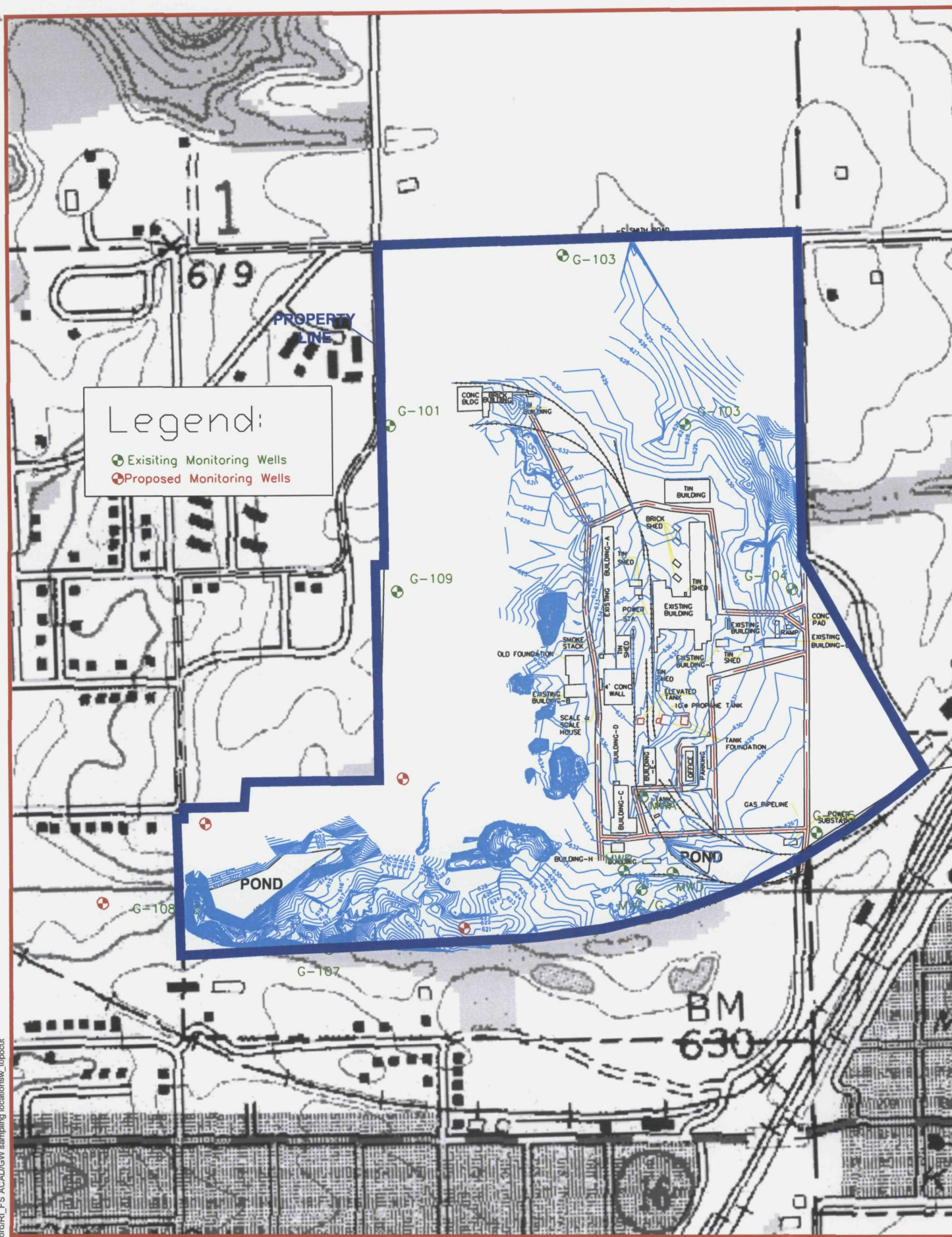
Approved:

Revised:



CP/Eagle Zinc-Hillsboro/RI FS-ACAD/Sediment Sampling Locations

CP/Eagle Zinc-Hillsboro/RI_FS ACAD/GW sampling locationsw_topocut



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Proposed Monitoring Wells
Eagle Zinc
Hillsboro, Illinois

Figure
3

Drafter:

Date:

Contract Number:

21-7400D

Approved:

Revised: